

## Large Format LW Type-II SLS FPAs for Space Applications, Phase II

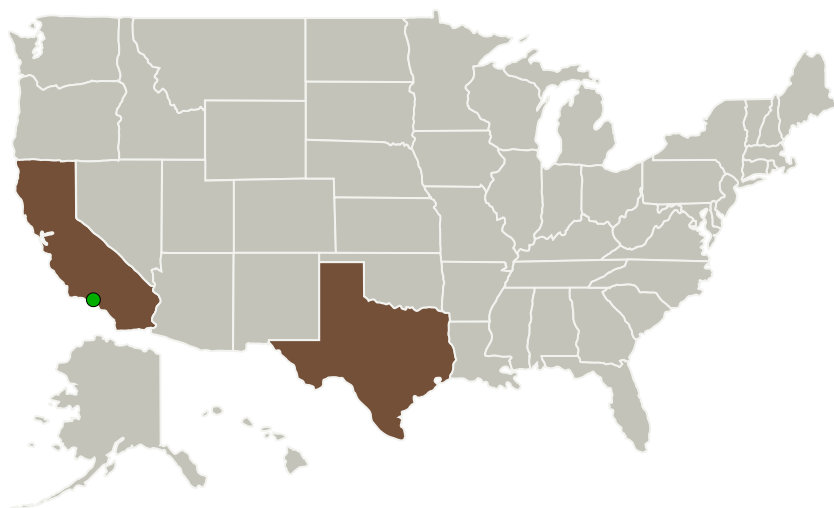
Completed Technology Project (2015 - 2017)




## Project Introduction

This Phase II SBIR proposes to further develop high performance (low dark current, high quantum efficiency, and low NE $\Delta$ T) infrared epitaxy materials based on Type II Strained Layer Superlattice (SLS) for large format space-based sensor applications. The epi materials will be grown with Sb-capable multi-wafer production Molecular Beam Epitaxy (MBE) reactor at IntelliEPI-IR. The initial goal includes achieving QE of at least 40% with LWIR spectral wavelength band near 12  $\mu$ m. The SLS detector design will be developed in consultation with the infrared detector group at JPL to ensure that this effort addresses NASA needs. Materials for prototype high-performance LWIR Focal Plane Array (FPA) will be demonstrated during the Phase II effort.

## Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
IntelliEPI IR, Inc.	Lead Organization	Industry	Richardson, Texas
 Jet Propulsion Laboratory(JPL)	Supporting Organization	NASA Center	Pasadena, California



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## Primary U.S. Work Locations

California

Texas

## Images



### Briefing Chart

Large Format LW Type-II SLS FPAs for Space Applications Briefing Chart

(<https://techport.nasa.gov/image/132087>)

## Organizational Responsibility

### Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

### Lead Organization:

IntelliEPI IR, Inc.

### Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

## Project Management

### Program Director:

Jason L Kessler

### Program Manager:

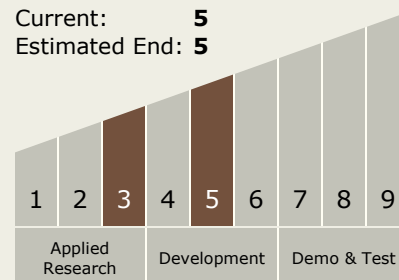
Carlos Torrez

### Principal Investigator:

Paul R Pinsukanjana

## Technology Maturity (TRL)

Start: 3  
Current: 5  
Estimated End: 5



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## Technology Areas

### Primary:

- TX08 Sensors and Instruments
  - └ TX08.1 Remote Sensing Instruments/Sensors
    - └ TX08.1.1 Detectors and Focal Planes

## Target Destinations

The Moon, Mars, Outside the Solar System, The Sun, Earth, Others Inside the Solar System